

Claims

1. A process for the preparation of form I of olanzapine, wherein olanzapine is crystallized from a solvent mixture which comprises 2-propanol.
2. Process according to claim 1, wherein the solvent mixture also comprises at least one further solvent selected from group consisting of tetrahydrofuran, methylene chloride, acetone, toluene, N, N-dimethylformamide, dimethylsulfoxide, and chloroform.
3. Process according to claim 2, wherein the solvent mixture comprises 2-propanol and at least one further solvent in a ratio of 1:0.1 to 5 parts by volume.
4. Process according to any one of claims 1 to 3, wherein the olanzapine is used in form of a solvate of olanzapine.
5. Process according to claim 4, wherein the solvate is at least one of the group consisting of a methylene chloride solvate, a 2-propanol solvate, a acetonitrile/methylene chloride/water mixed solvate and acetonitrile/water mixed solvate of olanzapine.
6. Acetonitrile/methylene chloride/water mixed solvate of olanzapine characterized by an x-ray powder diffraction pattern (2 theta) as follows:
8.76, 19.39, 20.12.
7. Acetonitrile/methylene chloride/water mixed solvate of olanzapine according to claim 6, characterized by an x-ray powder diffraction pattern (2 theta) as follows:
8.76, 18.29, 19.39, 19.66, 20.12, 23.13, 23.62, 25.08.
8. Acetonitrile/water mixed solvate of olanzapine characterized by an x-ray powder diffraction pattern (2 theta) as follows:
8.76, 9.10, 14.05, 19.37, 20.10, 24.55, 25.92, 27.96.
9. Acetonitrile/water mixed solvate of olanzapine according to claim 8, characterized by an x-ray powder diffraction pattern (2 theta) as follows:

8.76, 9.10, 14.05, 14.44, 18.30, 18.67, 18.84, 19.37, 19.68, 20.10, 20.54, 21.65, 22.79, 23.12, 23.62, 24.55, 25.06, 25.92, 27.96, 28.44.

10. 2-propanol solvate of olanzapine characterized by an x-ray powder diffraction pattern as follows:

8.74, 14.05, 19.38, 22.65, 23.03, 24.46, 25.92, 28.36.

11. 2-propanol solvate of olanzapine according to claim 10, characterized by an x-ray powder diffraction pattern as follows:

8.74, 14.05, 14.41, 17.77, 18.22, 18.76, 19.38, 19.81, 19.95, 20.54, 20.96, 21.64, 22.26, 22.65, 23.03, 23.58, 23.90, 24.46, 25.03, 25.39, 25.92, 26.63, 27.47, 27.95, 28.36.

12. Methylene chloride solvate IA of olanzapine characterized by an x-ray powder diffraction pattern as follows:

10.80, 14.25, 19.22, 22.78, 24.53.

13. Methylene chloride solvate IA of olanzapine according to claim 12, characterized by an x-ray powder diffraction pattern as follows:

8.85, 10.80, 12.89, 14.09, 14.25, 18.37, 18.81, 19.22, 19.41, 19.57, 20.07, 20.80, 21.00, 21.71, 22.06, 22.25, 22.78, 23.14, 23.62, 24.03, 24.53, 25.04, 25.43, 26.67, 27.51, 28.00, 28.45, 28.70.

14. Methylene chloride solvate IB of olanzapine characterized by an x-ray powder diffraction pattern as follows:

9.30, 10.80, 14.25, 14.98, 15.94, 19.23, 20.04.

15. Methylene chloride solvate IB of olanzapine according to claim 14, characterized by an x-ray powder diffraction pattern as follows:

8.43, 8.86, 9.30, 10.80, 14.25, 14.98, 15.94, 16.88, 17.79, 18.40, 18.57, 18.83, 19.23, 19.57, 20.04, 20.79, 21.01, 21.68, 22.06, 22.23, 23.57, 24.02, 24.89, 25.12, 25.46, 26.38, 26.56, 27.50, 28.06, 28.71, 29.02.

16. Process for preparing anhydrous forms of olanzapine by using at least one solvate according to any one of claims 6 to 15.
17. Process according to claim 16, wherein the anhydrous form of form I of olanzapine is prepared and wherein at least one solvate according to any one of claims 12 and 15 is dried.
18. Form A of olanzapine characterized by an x-ray powder diffraction pattern as follows:
11.52, 12.00, 13.35, 13.56, 14.21, 15.47, 16.69, 19.16, 20.25, 20.69, 22.12, 24.33, 26.88, 27.13.
19. Form A of olanzapine according to claim 18, characterized by an x-ray powder diffraction pattern as follows:
11.52, 11.83, 12.00, 13.35, 13.56, 14.21, 15.47, 16.69, 17.83, 19.16, 20.25, 20.69, 21.65, 22.12, 23.21, 24.33, 26.88, 27.13, 28.57.
20. Form A of olanzapine according to claim 18 or 19, which is in essentially pure form.
21. Form A of olanzapine according to claim 18, 19 or 20, which is anhydrous.
22. Process for preparing form A of olanzapine as defined in claim 18 to 21, comprising the steps of dissolving any form of olanzapine in a mixture of acetonitrile with a solvent in which olanzapine is soluble or in a solvent in which olanzapine is soluble, heating the mixture to obtain a clear solution, optionally filtering the solution, partly evaporating the solvent and isolating the product.
23. Pharmaceutical composition which comprises form A of olanzapine according to any one of claims 18 to 21.